

# NMCP COVID-19 Literature Report #61: Friday, 26 February 2021

**Prepared By:** Tracy C. Shields, MSIS, AHIP <tracy.c.shields2.civ@mail.mil>

Reference Medical Librarian; Naval Medical Center Portsmouth, Library Services

**Purpose:** These weekly reports, published on Fridays, are curated collections of current research, evidence reviews, special reports, grey literature, and news regarding the COVID-19 pandemic that may be of interest to medical providers, leadership, and decision makers.

All reports are available online at <https://nmcp.libguides.com/covidreport>. Access is private; you will need to use the direct link or bookmark the URL, along with the case-sensitive password "NMCPfinest".

**Disclaimer:** I am not a medical professional. This document is current as of the date noted above. While I make every effort to find and summarize available data, I cannot cover everything in the literature on COVID-19. Please feel free to reach out with questions, suggestions for future topics, or any other feedback.

## Statistics

*Global today:* 113,111,157 confirmed cases and 2,510,125 deaths in 192 countries/regions

*19 FEB 2021:* 110,439,431 confirmed cases and 2,444,329 deaths in 192 countries/regions

*12 FEB 2021:* 107,897,155 confirmed cases and 2,370,870 deaths in 192 countries/regions

*05 FEB 2021:* 105,006,686 confirmed cases and 2,287,129 deaths in 192 countries/regions

### United States\*

#### top 5 states by cases

	TOTAL US	CA	TX	FL	NY	IL
Cases	28,414,136	3,554,629	2,632,797	1,892,301	1,619,924	1,181,144
Deaths	508,314	51,395	43,085	30,475	47,264	22,607

\*see [census.gov](https://census.gov) for current US Population data; NA: not all data available

[JHU CSSE](https://jhu-csse.org) as of 1000 EDT 26 February 2021

Virginia is ranked 17th in cases and 20th in deaths.

	Total (state)	Chesapeake	Hampton	Newport News	Norfolk	Portsmouth	Suffolk	Virginia Beach
Cases	572,639	18,108	8,556	11,384	14,780	7,624	6,860	30,393
Hospitalizations	23,978	840	291	309	804	576	387	1,281
Deaths	8,197	179	103	148	183	136	150	293

[VA DOH](https://va.doh.gov) as of 1000 EDT 26 February 2021

## Calls, Webinars, and Podcasts

TOPIC: [CDC COCA: What Clinicians Need to Know About Johnson & Johnson's Janssen COVID-19 Vaccine](#)

"This COCA Call will give clinicians an overview of the J&J Janssen COVID-19 vaccine. Clinicians will learn about vaccine characteristics and administration, vaccinating special populations, and contraindications. They will also get answers to a number of clinical questions CDC has received about this new vaccine."

WHEN: Tuesday, 02 March 2021, 1400–1500 ET

<https://www.zoomgov.com/j/1603748312?pwd=anlmUURkSEtmdzBLSmNOV0pJSzZUQT09>

TOPIC: [CDC COCA: The Role of Telehealth in Expanding Access to Healthcare During the COVID-19 Pandemic: Considerations for Vaccine Uptake and Monitoring for Adverse Events](#)

" During this COCA call, presenters will discuss the role of telehealth in increasing access to healthcare during the COVID-19 pandemic and how telehealth can augment COVID-19 vaccine planning in healthcare facilities. Presenters will provide a summary of a recent series of discussions with the telemedicine community. Presenters will also share their experiences using telehealth tools for triaging and navigating patients, reaching low access communities, managing infectious and chronic illnesses, disseminating COVID-19 vaccine information, and monitoring for COVID-19 vaccine adverse events."

WHEN: Thursday, 11 March 2021, 1400–1500 ET

<https://www.zoomgov.com/j/1600341756?pwd=N2JKc3pOcW1lSGdtWUJQVkJiREt0dz09>

Coronapod (from Nature):

- [Our future with an ever-present coronavirus \[16:50 mins\]](#) (19 February 2021)
- [Is mixing COVID vaccines a good idea? \[16:14 mins\]](#) (12 February 2021)

## Special Reports

### *Updates to Treatment Guidelines*

The NIH has released a statement on bamlanivimab plus etesevimab; it says in part:

"The Panel recommends the use of bamlanivimab 700 mg plus etesevimab 1,400 mg for the treatment of outpatients with mild to moderate COVID-19 who are at high risk of clinical progression as defined by the EUA criteria...

The Panel recommends against the use of bamlanivimab 700 mg plus etesevimab 1,400 mg for patients who are hospitalized because of COVID-19, except in a clinical trial. However, bamlanivimab 700 mg plus etesevimab 1,400 mg should be considered for persons with mild to moderate COVID-19 who are hospitalized for a reason other than COVID-19 but who otherwise meet the EUA criteria" ([NIH](#)).

The IDSA has revised the recommendation on the use of tocilizumab:

"Recommendation 7: Among hospitalized adults with progressive severe\* or critical\*\* COVID-19 who have elevated markers of systemic inflammation, the IDSA guideline panel suggests tocilizumab in addition to standard of care (i.e., steroids) rather than standard of care alone. (Conditional recommendation, Low certainty of evidence)" ([IDSA](#)).

JHCHS: Johns Hopkins Center for Health Security. [Crisis Standards of Care: Lessons from New York City Hospitals' COVID-19 Experience The Emergency Medicine Perspective](#) (25 February 2021)

"New York City suffered an unprecedented surge of patients with novel coronavirus disease 2019 (COVID-19) from April to June 2020, and this surge was associated with extraordinary use of emergency department resources needed for severely ill patients. Hospitals were overwhelmed and unable to maintain conventional standards of care, forcing hospitals and healthcare workers to adjust the way that care was provided in order to do the most good for the greatest number of patients.

The purpose of this project was to convene a series of forums in which clinicians from hospitals across New York City could frankly discuss their experiences with implementation of crisis standards of care (CSC). The Johns Hopkins Center for Health Security, in collaboration with New York City Health + Hospitals, convened a virtual working group in October 2020, consisting of 15 New York City intensive care unit (ICU) directors, and interim recommendations were shared in November 2020.

A subsequent meeting with emergency physicians was convened on January 8, 2021. This report reflects findings from that discussion. Most participants agreed that the crisis

brought out the best in the staff, despite their having to cope with an arduous and harrowing situation. There was a sense of duty, a heightened sense of camaraderie, and a wealth of innovative thinking. Participants spoke of 'making the best of a bad situation.'"

The January/February issue of *Health Security* is on 'Infodemics and Health Security'. To see all articles, see: <https://www.liebertpub.com/toc/hs/19/1>

Also of note, the journal has a call for special issue papers on systemic racism and health security during COVID-19; see: <https://www.liebertpub.com/doi/10.1089/hs.2020.29000.cfp-2>

### **Selected Literature: Peer-Reviewed Journals**

*Date given is the date published or posted online; often these papers are ahead of print.*

*26 February 2021*

MMWR: [Reduction in COVID-19 Patients Requiring Mechanical Ventilation Following Implementation of a National COVID-19 Vaccination Program — Israel, December 2020–February 2021](#)

"What is already known about this topic? Clinical trials have demonstrated the efficacy of COVID-19 vaccines in a controlled setting. Israel initiated a national vaccination campaign in December 2020, prioritizing persons aged >60 years and other high-risk populations.

What is added by this report? By February 2021, 2-dose vaccination coverage was 84% among persons aged ≥70 years and 10% among those aged <50 years. The ratio of COVID-19 patients aged ≥70 years requiring mechanical ventilation to those aged <50 years declined 67% from October–December 2020 to February 2021.

What are the implications for public health practice? These findings provide preliminary evidence of the effectiveness of vaccines in preventing severe cases of COVID-19 at the national level in Israel."

*25 February 2021*

JAMA Netw Open: [Risk Factors Associated With COVID-19 Transmission Among US Air Force Trainees in a Congregant Setting](#)

"Question: In congregant settings with the introduction of coronavirus disease 2019 (COVID-19), what clinical and laboratory findings are associated with an outbreak?

Findings: In this cohort study of 10 613 US Air Force basic trainees living congregantly in 263 cohorts, 3% were diagnosed with COVID-19 infection. Cohorts with trainees with more symptoms and lower cycle threshold values on reverse transcription–polymerase chain reaction assay were significantly associated with greater risk of transmission of COVID-19 within their cohorts.

Meaning: In this study, a higher number of symptoms and lower cycle threshold values were associated with subsequent clusters of outbreaks within cohorts and may be useful as risk factor measures if validated in future studies."

*24 February 2021*

J Dent Hyg: [COVID-19 Prevalence and Related Practices among Dental Hygienists in the United States](#)

"Registered dental hygienists (RDHs) licensed in the US were invited to participate in a 30-question web-based survey. COVID-19 infection items included probable and confirmed results, COVID-19 related symptoms experienced in the last month, and level of concern about COVID-19 transmission to patients and themselves. The validated Patient Health Questionnaire 4 screened respondents for depression or anxiety. Personal protective equipment (PPE) use when treating patients was assessed. The research protocol and survey were approved by the American Dental Association IRB and registered at clinicaltrials.gov (NCT04542915). Kruskal-Wallis and X2 tests were used to test for associations between PPE use, PPE supply, mental health symptoms, and concern about COVID-19 transmission.

As of October 8, 2020, a total of 4,776 dental hygienists from all 50 states and Puerto Rico participated in the study. Respondents reported elevated symptoms of anxiety and depression. Of the respondents, 3.1% (n=149) had ever tested positive or been diagnosed with COVID-19. The majority of respondents (99.1%; n=3,328) who practiced dental hygiene reported their primary dental practice had enhanced infection prevention or control efforts in response to the pandemic. PPE use was significantly associated with years of experience as a dental hygienist, level of concern about COVID-19, and level of PPE supplies available (p-values<0.01), but not type of dental practice (p-value 0.1).

As of October 2020, the estimated prevalence rate of dental hygienists in the US having had COVID-19 was low. There is a need for further support for dental hygienists' use of PPE and mental health."

JAMA: [Characteristics and Outcomes of US Children and Adolescents With Multisystem Inflammatory Syndrome in Children \(MIS-C\) Compared With Severe Acute COVID-19](#)

"Question: How do the characteristics and outcomes of children and adolescents with multisystem inflammatory syndrome in children (MIS-C) compare with severe coronavirus disease 2019 (COVID-19)?

Findings: In this case series that included 539 patients with MIS-C and 577 patients with severe COVID-19, patients with MIS-C were more likely than those with severe COVID-19 to be 6 to 12 years old, be non-Hispanic Black, and have severe cardiovascular or mucocutaneous involvement and more extreme inflammation.

Meaning: The study findings suggest patterns of clinical presentation and organ involvement that distinguish between patients with MIS-C and severe acute COVID-19."

JAMA Intern Med: [Association of SARS-CoV-2 Seropositive Antibody Test With Risk of Future Infection](#)

"Question: Can observational clinical data from commercial laboratories be used to evaluate the comparative risk of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection for individuals who are antibody positive vs those who are antibody negative?

Finding: In this cohort study of more than 3.2 million US patients with a SARS-CoV-2 antibody test, 0.3% of those indexed with positive test results had evidence of a positive nucleic acid amplification test beyond 90 days after index, compared with 3.0% indexed with negative antibody test results.

Meaning: Individuals who are seropositive for SARS-CoV-2 based on commercial assays may be at decreased future risk of SARS-CoV-2 infection."

MMWR: [Community Transmission of SARS-CoV-2 at Three Fitness Facilities — Hawaii, June–July 2020](#)

"What is already known about this topic? COVID-19 outbreaks have been reported from fitness and sports facilities.

What is added by this report? Twenty-one COVID-19 cases were linked to an index case in a fitness instructor, who, along with a patient who was also an instructor, taught classes <1 day, 1 to <2 days, and ≥2 days before symptom onset; aggregate attack rates were 95%, 13%, and 0%, respectively.

What are the implications for public health practice? To reduce SARS-CoV-2 transmission in fitness facilities, staff members and patrons should wear a mask, and facilities should enforce consistent and correct mask use (including during high-intensity activities) and

physical distancing, improve ventilation, and remind patrons and staff members to stay home when ill. Exercising outdoors or virtually could further reduce SARS-CoV-2 transmission risk."

See also: [Emerg Infect Dis](#)

MMWR: [COVID-19 Outbreak Among Attendees of an Exercise Facility — Chicago, Illinois, August–September 2020](#)

"What is already known about this topic? Increased respiratory exertion facilitates SARS-CoV-2 transmission; outbreaks linked to indoor activities have been reported.

What is added by this report? In August 2020, 55 COVID-19 cases were identified among 81 attendees of indoor high-intensity classes at a Chicago exercise facility. Twenty-two (40%) persons with COVID-19 attended on or after the day symptoms began. Most attendees (76%) wore masks infrequently, including persons with (84%) and without COVID-19 (60%).

What are the implications for public health practice? To reduce SARS-CoV-2 transmission in fitness facilities, attendees should wear a mask, including during high-intensity activities when  $\geq 6$  ft apart. In addition, facilities should enforce physical distancing, improve ventilation, and encourage attendees to isolate after symptom onset or receiving a positive SARS-CoV-2 test result and to quarantine after a potential exposure to SARS-CoV-2 and while awaiting test results. Exercising outdoors or virtually could further reduce SARS-CoV-2 transmission risk."

See also: [Emerg Infect Dis](#)

NEJM: [BNT162b2 mRNA Covid-19 Vaccine in a Nationwide Mass Vaccination Setting](#)

"As mass vaccination campaigns against coronavirus disease 2019 (Covid-19) commence worldwide, vaccine effectiveness needs to be assessed for a range of outcomes across diverse populations in a noncontrolled setting. In this study, data from Israel's largest health care organization were used to evaluate the effectiveness of the BNT162b2 mRNA vaccine.

All persons who were newly vaccinated during the period from December 20, 2020, to February 1, 2021, were matched to unvaccinated controls in a 1:1 ratio according to demographic and clinical characteristics. Study outcomes included documented infection with the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), symptomatic Covid-19, Covid-19-related hospitalization, severe illness, and death. We estimated vaccine effectiveness for each outcome as one minus the risk ratio, using the Kaplan-Meier estimator.

Each study group included 596,618 persons. Estimated vaccine effectiveness for the study outcomes at days 14 through 20 after the first dose and at 7 or more days after the second dose was as follows: for documented infection, 46% (95% confidence interval [CI], 40 to 51)

and 92% (95% CI, 88 to 95); for symptomatic Covid-19, 57% (95% CI, 50 to 63) and 94% (95% CI, 87 to 98); for hospitalization, 74% (95% CI, 56 to 86) and 87% (95% CI, 55 to 100); and for severe disease, 62% (95% CI, 39 to 80) and 92% (95% CI, 75 to 100), respectively. Estimated effectiveness in preventing death from Covid-19 was 72% (95% CI, 19 to 100) for days 14 through 20 after the first dose. Estimated effectiveness in specific subpopulations assessed for documented infection and symptomatic Covid-19 was consistent across age groups, with potentially slightly lower effectiveness in persons with multiple coexisting conditions.

This study in a nationwide mass vaccination setting suggests that the BNT162b2 mRNA vaccine is effective for a wide range of Covid-19-related outcomes, a finding consistent with that of the randomized trial."

PLoS One: [Ultra-rapid detection of SARS-CoV-2 in public workspace environments](#)

"Managing the pandemic caused by SARS-CoV-2 requires new capabilities in testing, including the possibility of identifying, in minutes, infected individuals as they enter spaces where they must congregate in a functioning society, including workspaces, schools, points of entry, and commercial business establishments. Here, the only useful tests (a) require no sample transport, (b) require minimal sample manipulation, (c) can be performed by unlicensed individuals, (d) return results on the spot in much less than one hour, and (e) cost no more than a few dollars. The sensitivity need not be as high as normally required by the FDA for screening asymptomatic carriers (as few as 10 virions per sample), as these viral loads are almost certainly not high enough for an individual to present a risk for forward infection. This allows tests specifically useful for this pandemic to trade-off unneeded sensitivity for necessary speed, simplicity, and frugality. In some studies, it was shown that viral load that creates forward-infection risk may exceed 10<sup>5</sup> virions per milliliter, easily within the sensitivity of an RNA amplification architecture, but unattainable by antibody-based architectures that simply target viral antigens. Here, we describe such a test based on a displaceable probe loop amplification architecture."

23 February 2021

JAMA: [COVID-19 Communication—The Need for Humanity, Empathy, and Grace](#)

"In this narrative medicine essay, a medical school professor expresses gratitude for the caring and empathy expressed by the team caring for her mother hospitalized with COVID-19 and emphasizes the importance of humanity and compassion over facts and statistics for families physically separated from their critically ill loved ones."

JAMA Psychiatry: [Effect of Layperson-Delivered, Empathy-Focused Program of Telephone Calls on Loneliness, Depression, and Anxiety Among Adults During the COVID-19 Pandemic: A Randomized Clinical Trial](#)

NMCP COVID-19 Literature Report #61: Friday, 26 February 2021

Tracy C. Shields, MSIS, AHIP (Reference Medical Librarian at NMCP, Library Services)



"Question: Can a program of empathetic conversations delivered by laypeople via telephone reduce loneliness, depression, and anxiety in at-risk older adults?

Findings: In this randomized clinical trial of 240 older adults receiving services through a Meals on Wheels organization, a 4-week empathy-oriented telephone program delivered by rapidly trained lay callers during the coronavirus disease 2019 pandemic improved loneliness, depression, anxiety, and general mental health.

Meaning: In this study, loneliness, depression, and anxiety were rapidly reduced through layperson-delivered calls that focused on empathetic listening, suggesting a scalable approach to persistent mental health challenges of older adults."

Ultrasound Obstetr Gynecol: [Pregnancy and neonatal outcomes of COVID-19: co-reporting of common outcomes from PAN-COVID and AAP SONPM registries](#)

"Few large cohort studies have reported data on maternal, fetal, perinatal and neonatal outcomes associated with SARS-CoV-2 infection in pregnancy. We report the outcome of infected pregnancies from a collaboration formed early during the pandemic between the investigators of two registries, the UK and global Pregnancy and Neonatal outcomes in COVID-19 (PAN-COVID) study and the US American Academy of Pediatrics Section on Neonatal Perinatal Medicine (AAP SONPM) National Perinatal COVID-19 Registry.

This was an analysis of data from the PAN-COVID registry (January 1st to July 25th 2020), which includes pregnancies with suspected or confirmed maternal SARS-CoV-2 infection at any stage in pregnancy, and the AAP SONPM National Perinatal COVID-19 registry (April 4th to August 8th 2020), which includes pregnancies with positive maternal testing for SARS-CoV-2 from 14 days before delivery to 3 days after delivery. The registries collected data on maternal, fetal, perinatal and neonatal outcomes. The PAN-COVID results are presented both overall for pregnancies with suspected or confirmed SARS-CoV-2 infection and separately in those with confirmed infection.

We report on 4005 pregnant women with suspected or confirmed SARS-CoV-2 infection (1606 from PAN-COVID and 2399 from AAP SONPM). For obstetric outcomes, in PAN-COVID overall, those with confirmed infection in PAN-COVID and AAP SONPM, respectively, maternal death occurred in 0.5%, 0.5% and 0.2% of cases, early neonatal death in 0.2%, 0.3% and 0.3% of cases and stillbirth in 0.5%, 0.6% and 0.4% of cases. Delivery was pre-term (<37 weeks' gestation) in 12.0% of all women in PAN-COVID, in 16.2% of those women with confirmed infection in PAN-COVID and in 15.7% of women in AAP SONPM. Extremely preterm delivery (< 27 weeks' gestation) occurred in 0.5% of cases in PAN-COVID and 0.3% in AAP SONPM. Neonatal SARS-CoV-2 infection was reported in 0.8% of all deliveries in PAN-COVID, in 2.0% in those with confirmed infection in PAN-COVID and in 1.8% in AAP SONPM; the proportions of neonates tested were 9.5%, 20.7% and 87.2%, respectively. The rates of a SGA neonate were 8.2% in PAN-COVID overall, 9.7% in those with confirmed infection and

9.6% in AAP SONPM. Mean gestational age adjusted birth-weight z-scores were -0.03 in PAN-COVID and -0.18 in AAP SONPM.

The findings from the UK and US registries of pregnancies with SARS-CoV-2 infection were remarkably concordant. Preterm delivery affected a higher proportion of women than expected based on historical and contemporaneous national data. The proportions of pregnancies affected by stillbirth, a small for gestational age infant or early neonatal death were comparable to those in historical and contemporaneous UK and US data. Although maternal death was uncommon, the rate was higher than expected based on UK and US population data, which is likely explained by under-ascertainment of women affected by milder or asymptomatic infection in pregnancy in the PAN-COVID study although not in the AAP SONPM study. The data presented support strong guidance for enhanced precautions to prevent SARS-CoV-2 infection in pregnancy, particularly in the context of increased risks of preterm delivery and maternal mortality, and for priority vaccination of women planning pregnancy."

22 February 2021

Am J Infect Control: [Impact of the Influenza Vaccine on COVID-19 Infection Rates and Severity](#)

"In this retrospective cohort study, patients receiving a laboratory test for COVID-19 were identified. The primary outcome was comparison of positive COVID-19 testing in those who received the influenza vaccine versus those who did not. Secondary end points in patients testing positive for COVID-19 included mortality, need for hospitalization, length of stay, need for intensive care, and mechanical ventilation.

A total of 27,201 patients received laboratory testing for COVID-19. The odds of testing positive for COVID-19 was reduced in patients who received an influenza vaccine compared to those who did not (odds ratio 0.76, 95% CI 0.68 to 0.86;  $P < 0.001$ ). Vaccinated patients testing positive for COVID-19 were less likely to require hospitalization (odds ratio, 0.58, 95% CI 0.46 to 0.73;  $P < 0.001$ ), or mechanical ventilation (odds ratio, 0.45, 95% CI 0.27 to 0.78;  $P = 0.004$ ) and had a shorter hospital length of stay (risk ratio, 0.76, 95% CI 0.65 to 0.89;  $P < 0.001$ ).

Influenza vaccination is associated with decreased positive COVID-19 testing and improved clinical outcomes and should be promoted to reduce the burden of COVID-19."

EClinicalMedicine: [Medical vulnerability of individuals with down syndrome to severe COVID-19 – data from the trisomy 21 research society and the UK ISARIC4C survey](#)

"Health conditions, immune dysfunction, and premature aging associated with trisomy 21 (Down syndrome, DS) may impact the clinical course of COVID-19.

The T21RS COVID-19 Initiative launched an international survey for clinicians or caregivers on patients with COVID-19 and DS. Data collected between April and October 2020 (N=1046) were analysed and compared with the UK ISARIC4C survey of hospitalized COVID-19 patients with and without DS.

The mean age of COVID-19 patients with DS in the T21RS survey was 29 years (SD = 18). Similar to the general population, the most frequent signs and symptoms of COVID-19 were fever, cough, and shortness of breath. Joint/muscle pain and vomiting or nausea were less frequent ( $p < 0.01$ ), whereas altered consciousness/confusion were more frequent ( $p < 0.01$ ). Risk factors for hospitalization and mortality were similar to the general population with the addition of congenital heart defects as a risk factor for hospitalization. Mortality rates showed a rapid increase from age 40 and were higher in patients with DS (T21RS DS versus non-DS patients: risk ratio (RR) = 3.5 (95%-CI=2.6;4.4), ISARIC4C DS versus non-DS patients: RR = 2.9 (95%-CI=2.1;3.8)) even after adjusting for known risk factors for COVID-19 mortality.

Leading signs/symptoms of COVID-19 and risk factors for severe disease course are similar to the general population. However, individuals with DS present significantly higher rates of medical complications and mortality, especially from age 40."

Int J Infect Dis: [Less severe course of COVID-19 is associated with elevated levels of antibodies against seasonal human coronaviruses OC43 and HKU1 \(HCoV OC43, HCoV HKU1\)](#)

"The clinical course of COVID-19 is very heterogeneous: Most infected individuals can be managed in an outpatient setting, but a substantial proportion of patients requires intensive care, resulting in a high rate of fatalities. We performed a biomarker study to assess the impact of prior infections with seasonal coronaviruses on COVID-19 severity. 60 patients with confirmed COVID-19 infections were included (age 30 - 82 years; 52 males, 8 females): 19 inpatients with critical disease, 16 inpatients with severe or moderate disease and 25 outpatients. Patients with critical disease had significantly lower levels of anti-HCoV OC43-NP ( $p = 0.016$ ) and HCoV HKU1-NP ( $p = 0.023$ ) antibodies at the first encounter compared to other COVID-19 patients. Our results indicate that prior infections with seasonal coronaviruses might protect against a severe course of disease."

JAMA Netw Open: [Trends in Trauma Admissions During the COVID-19 Pandemic in Los Angeles County, California](#)

"Question: How have trauma admission volume and injury patterns changed in metropolitan areas during the coronavirus disease 2019 pandemic?

Findings: In this retrospective cohort study of 6777 trauma admissions in Los Angeles County from January 1 to June 7, 2020, overall volume transiently decreased but quickly

returned to baseline. Mechanisms of injury were significantly different, with a steady increase in admissions for penetrating injuries.

Meaning: These findings highlight the persistence of trauma burden in the community despite widespread restriction on public activity and the need to maintain trauma care resources and violence mitigation efforts during national emergencies."

JAMA Pediatr: [Association of the Timing of School Closings and Behavioral Changes With the Evolution of the Coronavirus Disease 2019 Pandemic in the US](#)

"Question: What are the independent associations of voluntary behavioral change and legal restrictions, such as state-mandated school closings, with the subsequent spread of the coronavirus disease 2019 (COVID-19) pandemic in the US?

Findings: In this cross-sectional study of US COVID-19 data, voluntary behavioral changes, such as reductions in time spent at work, had an association with COVID-19 incidence and mortality that was 3 times stronger than that of school closures.

Meaning: These findings suggest that less harmful ways of preventing severe acute respiratory syndrome coronavirus 2 transmission are available than mandatory school closures."

MMWR: [Clusters of SARS-CoV-2 Infection Among Elementary School Educators and Students in One School District — Georgia, December 2020–January 2021](#)

"What is already known about this topic? In-person learning provides important benefits to children and communities. Understanding SARS-CoV-2 transmission in schools is critical to improving the safety of in-person learning.

What is added by this report? An investigation of SARS-CoV-2 transmission in a Georgia school district during December 1, 2020–January 22, 2021, identified nine clusters of COVID-19 cases involving 13 educators and 32 students at six elementary schools. Two clusters involved probable educator-to-educator transmission that was followed by educator-to-student transmission in classrooms and resulted in approximately one half (15 of 31) of school-associated cases.

What are the implications for public health practice? Educators might play a central role in in-school transmission networks. Preventing SARS-CoV-2 infections through multifaceted school mitigation measures and COVID-19 vaccination of educators is a critical component of preventing in-school transmission."

PNAS: [Influence of a COVID-19 vaccine's effectiveness and safety profile on vaccination acceptance](#)

"Acceptance of vaccines has been on the decline in recent years. Despite encouraging early results for coronavirus vaccine trials, achieving herd immunity requires substantial uptake. We presented scenarios varying vaccine efficacy, minor side effects, and severe reactions to a sample representative of the US population. Vaccine acceptance improved when the efficacy increased beyond 70%. Respondents were unaffected by the probability of minor side effects, such as a sore arm or fever lasting 24 h. The chances of accepting the vaccine were lower when the probability of serious adverse reactions was 1/100,000 in contrast to 1/million or 1/100 million. A replication showed that the results were largely unchanged following the public announcement that the vaccines were 95% effective."

20 February 2021

Clin Infect Dis: [Characteristics and Factors Associated with COVID-19 Infection, Hospitalization, and Mortality Across Race and Ethnicity](#)

"This retrospective cohort study examined 629,953 patients tested for SARS-CoV-2 in a large health system spanning California, Oregon, and Washington between March 1 and December 31, 2020. Sociodemographic and clinical characteristics were obtained from electronic health records. Odds of SARS-CoV-2 infection, COVID-19 hospitalization, and in-hospital death were assessed with multivariate logistic regression.

570,298 patients with known race/ethnicity were tested for SARS-CoV-2, of whom 27.8% were non-White minorities. 54,645 individuals tested positive, with minorities representing 50.1%. Hispanics represented 34.3% of infections but only 13.4% of tests. While generally younger than White patients, Hispanics had higher rates of diabetes but fewer other comorbidities. 8,536 patients were hospitalized and 1,246 died, of whom 56.1% and 54.4% were non-White, respectively. Racial/ethnic distributions of outcomes across the health system tracked with state-level statistics. Increased odds of testing positive and hospitalization were associated with all minority races/ethnicities. Hispanic patients also exhibited increased morbidity, and Hispanic race/ethnicity was associated with in-hospital mortality (OR: 1.39 [95% CI: 1.14-1.70]).

Major healthcare disparities were evident, especially among Hispanics who tested positive at a higher rate, required excess hospitalization and mechanical ventilation, and had higher odds of in-hospital mortality despite younger age. Targeted, culturally-responsive interventions and equitable vaccine development and distribution are needed to address the increased risk of poorer COVID-19 outcomes among minority populations."

Clin Rev Allergy Immunol: [A Review of Persistent Post-COVID Syndrome \(PPCS\)](#)

"Persistent post-COVID syndrome, also referred to as long COVID, is a pathologic entity, which involves persistent physical, medical, and cognitive sequelae following COVID-19, including persistent immunosuppression as well as pulmonary, cardiac, and vascular fibrosis. Pathologic fibrosis of organs and vasculature leads to increased mortality and severely worsened quality of life. Inhibiting transforming growth factor beta (TGF- $\beta$ ), an immuno- and a fibrosis modulator, may attenuate these post-COVID sequelae. Current preclinical and clinical efforts are centered on the mechanisms and manifestations of COVID-19 and its presymptomatic and prodromal periods; by comparison, the postdrome, which occurs in the aftermath of COVID-19, which we refer to as persistent post-COVID-syndrome, has received little attention. Potential long-term effects from post-COVID syndrome will assume increasing importance as a surge of treated patients are discharged from the hospital, placing a burden on healthcare systems, patients' families, and society in general to care for these medically devastated COVID-19 survivors. This review explores underlying mechanisms and possible manifestations of persistent post-COVID syndrome, and presents a framework of strategies for the diagnosis and management of patients with suspected or confirmed persistent post-COVID syndrome."

Eur Heart J: [Inflammatory syndrome in children associated with COVID-19 complicated by acute myocardial infarction](#)

"Pediatric intensivists and a pediatric cardiologist from University Hospital Padua in Italy present the case of a previously healthy 4-year-old child that presented with symptoms of an inflammatory syndrome (fever, conjunctivitis, and skin rash) and positive anti-SARS-CoV-2 IgG. Six days after admission, the child developed irritability and vomiting with ST-segment elevations and troponin of 2801 ng/L (see summary). Successful thrombolysis with alteplase, heparin, and aspirin was performed. The authors believe this is the first reported case of acute myocardial infarction in the context of SARS-CoV-2 associated pediatric multisystem inflammatory syndrome, and suggest providers are aware of this potential complication." (from [COVID-19 LST](#))

19 February 2021

JAMA: [SARS-CoV-2 Positivity on or After 9 Days Among Quarantined Student Contacts of Confirmed Cases](#)

"This study describes coronavirus test positivity rates among elementary, middle, and high school student contacts of confirmed COVID-19 cases in a Florida county where schools required a negative test on day 9 before return to school on day 10."

JAMA Netw Open: [Sequelae in Adults at 6 Months After COVID-19 Infection](#)

"This cohort study analyzed persistent symptoms among adults with coronavirus disease 2019 up to 9 months after illness onset."

Lancet: [Single-dose administration and the influence of the timing of the booster dose on immunogenicity and efficacy of ChAdOx1 nCoV-19 \(AZD1222\) vaccine: a pooled analysis of four randomised trials](#)

" The ChAdOx1 nCoV-19 (AZD1222) vaccine was approved for emergency use authorisation in the UK on the basis of interim efficacy results from 131 cases of primary symptomatic COVID-19, with efficacy based on two of the four trials of the vaccine. The planned roll-out of the vaccine in the UK involves the administration of two doses 12 weeks apart, a policy that has received substantial comment.

This report provides updated primary efficacy results after a further month of data collection. The interim report included 131 cases of primary symptomatic COVID-19. The latest results with additional follow-up include 332 cases of primary symptomatic COVID-19. Efficacy estimates now include data from all four studies of the vaccine from three countries, whereas the interim analysis included only two studies in efficacy assessments because of the small number of cases in the smaller studies. In addition to the primary efficacy assessment, post-hoc exploratory analyses have been added, including a breakdown of efficacy by prime-boost interval, and the efficacy of a single dose of vaccine.

The primary analysis supports the findings reported in the interim analysis that the vaccine is efficacious and safe. Exploratory analyses show that higher vaccine efficacy is obtained with a longer prime-boost interval, and that a single dose of vaccine is efficacious in the first 90 days, providing further evidence for current policy."

*18 February 2021*

Lancet: [Early rate reductions of SARS-CoV-2 infection and COVID-19 in BNT162b2 vaccine recipients](#)

"Our data show substantial early reductions in SARS-CoV-2 infection and symptomatic COVID-19 rates following first vaccine dose administration. Early reductions of COVID-19 rates provide support of delaying the second dose in countries facing vaccine shortages and scarce resources, so as to allow higher population coverage with a single dose. Longer follow-up to assess long-term effectiveness of a single dose is needed to inform a second dose delay policy."

Lancet Digit Health: [Indirect acute effects of the COVID-19 pandemic on physical and mental health in the UK: a population-based study](#)



"To our knowledge this is the first study to explore changes in health-care contacts for acute physical and mental health conditions in a large population representative of the UK. We used electronic primary care health records of around 10 million individuals across the UK to investigate the indirect effects of the pandemic on primary care contacts for mental health, acute alcohol-related events, asthma and chronic obstructive pulmonary disease (COPD) exacerbations, and cardiovascular and diabetic emergencies up to July, 2020. For all conditions studied, we found primary care contacts dropped dramatically after the introduction of population-wide restriction measures in March, 2020. By July, 2020, with the exception of unstable angina and acute alcohol-related events, primary care contacts for all conditions studied had not recovered to pre-lockdown levels. In the general population, estimates of the absolute reduction in the number of primary care contacts cumulatively to July, 2020, compared with what we would expect from previous years, varied from fewer than ten contacts per million for some cardiovascular outcomes, to 6600 per million for anxiety and 12 800 per million for depression. In people with COPD, we estimated 43 900 per million fewer contacts for COPD exacerbations to July, 2020, than what we would expect from previous years.

Although our results might represent some genuine reduction in disease frequency (eg, the restriction measures could have improved diabetic glycaemic control through more regular daily routines at home), it is more likely the reduced primary care contacts we saw represent a substantial burden of unmet need (particularly for mental health conditions) that could be reflected in subsequent increased mortality and morbidity. Health service providers should take steps to prepare for increased demand in the coming months and years, due to the short-term and long-term ramifications of reduced access to care for severe acute physical and mental health conditions. Maintaining access to primary care is key to future public health planning in relation to the pandemic."

Sci Rep: [Years of life lost to COVID-19 in 81 countries](#)

"Understanding the mortality impact of COVID-19 requires not only counting the dead, but analyzing how premature the deaths are. We calculate years of life lost (YLL) across 81 countries due to COVID-19 attributable deaths, and also conduct an analysis based on estimated excess deaths. We find that over 20.5 million years of life have been lost to COVID-19 globally. As of January 6, 2021, YLL in heavily affected countries are 2–9 times the average seasonal influenza; three quarters of the YLL result from deaths in ages below 75 and almost a third from deaths below 55; and men have lost 45% more life years than women. The results confirm the large mortality impact of COVID-19 among the elderly. They also call for heightened awareness in devising policies that protect vulnerable demographics losing the largest number of life-years."

See also: [CDC's Provisional Life Expectancy Estimates for January through June, 2020 \[pdf\]](#)



17 February 2021

Arch Pathol Lab Med: [Histologic and Immunohistochemical Evaluation of 65 Placentas from Women with Polymerase Chain Reaction-proven Severe Acute Respiratory Syndrome Coronavirus 2 \(SARS-CoV-2\) Infection](#)

"Coronavirus disease 2019 (COVID-19) has been shown to have effects outside of the respiratory system. Placental pathology in the setting of maternal severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection remains a topic of great interest as earlier studies have shown mixed results.

To ascertain whether maternal SARS-CoV-2 infection is associated with any specific placental histopathology, and to evaluate the virus's propensity for direct placental involvement.

Placentas from 65 women with polymerase chain reaction-proven SARS-CoV-2 infection underwent histologic evaluation using Amsterdam consensus group criteria and terminology. Another 85 placentas from women without SARS-CoV-2 constituted the negative control group. Sixty-four of the placentas from the SARS-CoV-2-positive group underwent immunohistochemical staining for SARS-CoV-2 nucleocapsid protein.

Pathologic findings were divided into maternal vascular malperfusion, fetal vascular malperfusion, chronic inflammatory lesions, amniotic fluid infection sequence, increased perivillous fibrin, intervillous thrombi, increased subchorionic fibrin, meconium-laden macrophages within fetal membranes, and chorangiosis. There was no statistically significant difference in prevalence of any specific placental histopathology between the SARS-CoV-2-positive and negative groups. There was no immunohistochemical evidence of SARS-CoV-2 virus in any of the 64 placentas that underwent staining for viral nucleocapsid protein.

Our study results and a literature review suggest that there is no characteristic histopathology in the majority of placentas from women with SARS-CoV-2 infection. Likewise, direct placental involvement by SARS-CoV-2 is a rare event."

J Med Virol: [SARS-CoV-2 infection affects the lower urinary tract and male genital system: a systematic review](#)

"PubMed, Scopus, and ISI Web of Knowledge databases were searched to identify studies published up to December 2020 on the involvement of urinary and male genital systems in COVID-19. Sixteen studies involving a total of 575 patients (538 males and 37 females) were included in this systematic review. The COVID-19 phase was available for 479 patients: 426 in the acute and 53 in the recovery phase. De novo lower urinary tract symptoms (LUTS) were observed in 43 patients and deterioration of preexisting LUTS in 7. Bladder hemorrhage was observed in 3 patients and acute urinary retention in one. Regarding male

genital system, scrotal discomfort was observed in 8 patients, swelling in 14, pain in 16, and erythema in one; low flow priapism was observed in 2 patients. Ultrasound examination identified acute orchitis in 10 patients, acute epididymitis in 7, and acute epididymo-orchitis in 16. A case-control study reported that patients with moderate COVID-19 show a significant reduction in sperm concentration, total number of sperms per ejaculate, progressive motility, and complete motility.

Contrary to what known from the first studies on the subject, this review also including subsequent studies give evidence of an involvement of lower urinary tract and male genital system in COVID-19."

NEJM: [Delayed Second Dose versus Standard Regimen for Covid-19 Vaccination](#)

"Internists and health policy experts from Indiana University, University of California San Francisco, and the University of Pennsylvania debate the best allocation strategy for a limited COVID-19 vaccine supply. One author recommends delaying the second dose to vaccinate as many people as possible as quickly as possible, while the other recommends maintaining the current vaccination schedule due to the lack of data describing how delayed boosters would compromise vaccine effectiveness (see summary). The article suggests there is no current one correct solution to this question and open discourse must occur as decisions are made.

#### SUMMARY

The argument for delaying the second dose:

- By the time a second dose is required (3-4 weeks) the patient is effectively protected 80-90%
- The benefit of a second dose confers a 10% benefit of protection from 85-95%
- However, it appears to be more beneficial to take the would be second dose and instead initially vaccinate another to raise their protection from 0 to 85%
- The UK has already endorsed a delayed vaccination schedule
- The CDC has relaxed their guidelines, endorsing 6 weeks is acceptable for the second dose

The argument for maintaining current recommendations:

- There is no current evidence supporting a delay
- There exists no current data to infer the effectiveness of a delayed dose
- Frontline workers need assurance the vaccines are effective and skirting the guidelines cannot offer said reassurance
- Suboptimal vaccination could help promote antigenic variants of the virus, thus worsening the pandemic" (from [COVID-19 LST](#))

PLoS Biol: [COVID-19 induces a hyperactive phenotype in circulating platelets](#)

"Coronavirus Disease 2019 (COVID-19), caused by the novel Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), has affected over 30 million globally to date. Although high rates of venous thromboembolism and evidence of COVID-19-induced endothelial dysfunction have been reported, the precise aetiology of the increased thrombotic risk associated with COVID-19 infection remains to be fully elucidated. Therefore, we assessed clinical platelet parameters and circulating platelet activity in patients with severe and nonsevere COVID-19. An assessment of clinical blood parameters in patients with severe COVID-19 disease (requiring intensive care), patients with nonsevere disease (not requiring intensive care), general medical in-patients without COVID-19, and healthy donors was undertaken. Platelet function and activity were also assessed by secretion and specific marker analysis. We demonstrated that routine clinical blood parameters including increased mean platelet volume (MPV) and decreased platelet:neutrophil ratio are associated with disease severity in COVID-19 upon hospitalisation and intensive care unit (ICU) admission. Strikingly, agonist-induced ADP release was 30- to 90-fold higher in COVID-19 patients compared with hospitalised controls and circulating levels of platelet factor 4 (PF4), soluble P-selectin (sP-selectin), and thrombopoietin (TPO) were also significantly elevated in COVID-19. This study shows that distinct differences exist in routine full blood count and other clinical laboratory parameters between patients with severe and nonsevere COVID-19. Moreover, we have determined all COVID-19 patients possess hyperactive circulating platelets. These data suggest abnormal platelet reactivity may contribute to hypercoagulability in COVID-19 and confirms the role that platelets/clotting has in determining the severity of the disease and the complexity of the recovery path."

16 February 2021

BMC Psychiatry: [Depressive, anxiety, and insomnia symptoms between population in quarantine and general population during the COVID-19 pandemic: a case-controlled study](#)

"The COVID-19 pandemic have caused mental and psychological problems on the general population, patients, and related workers. Our study is to determine the impact of mental and psychological symptoms among population in quarantine for 2 weeks during COVID-19 pandemic.

A case-controlled study design have conducted at department of psychiatry of Shenzhen Longgang Center for Chronic Disease Control in Shenzhen, China mainland from 7th April to 15th June 2020. 1674 participants (aged 18 to 65 years) in quarantine for 2 weeks and 1743 age-sex matched controls living in Shenzhen were recruited between 7th April 2020 and

15th June 2020. The assessment of depressive, anxiety, and insomnia symptoms were determined by self-reported questionnaires PHQ-9, GAD-7, and ISI, respectively.

A total of 1674 participants in quarantine for 2 weeks and 1743 age-sex matched controls ( $32.6 \pm 9.3$  years vs.  $32.7 \pm 10.7$  years, 49.8% vs. 47.8% females) were recruited. Population in quarantine had higher score on PHQ-9 ( $6.1 \pm 5.5$  vs.  $3.0 \pm 3.7$ ,  $p < 0.001$ ), GAD-7 ( $4.2 \pm 4.7$  vs.  $1.9 \pm 3.7$ ,  $p < 0.001$ ), and ISI ( $5.5 \pm 5.8$  vs.  $3.1 \pm 5.0$ ,  $p < 0.001$ ) compared to general population. Population in quarantine showed significantly higher risks of depression (OR: 4.55, 95% CI: 3.82–5.41), anxiety (OR: 2.92, 95% CI: 2.43–3.51), and insomnia (OR: 2.40, 95% CI: 2.02–2.89), when compared to the general population. Younger, more education, non-married and lower household income showed higher risks of mental health problems.

Population in quarantine had a higher level of depressive, anxiety, and insomnia symptoms than controls. Specifically, they were at a higher risk prevalence of depression, anxiety, and insomnia, especially the severity of depression, when compared to controls. Younger, more education, non-married, and lower income population in quarantine were at higher risks of mental health problems. Mental health professionals should pay attention to the mental and psychological symptoms for population in quarantine."

Clin Infect Dis: [Social Distancing Alters the Clinical Course of COVID-19 in Young Adults: A Comparative Cohort Study](#)

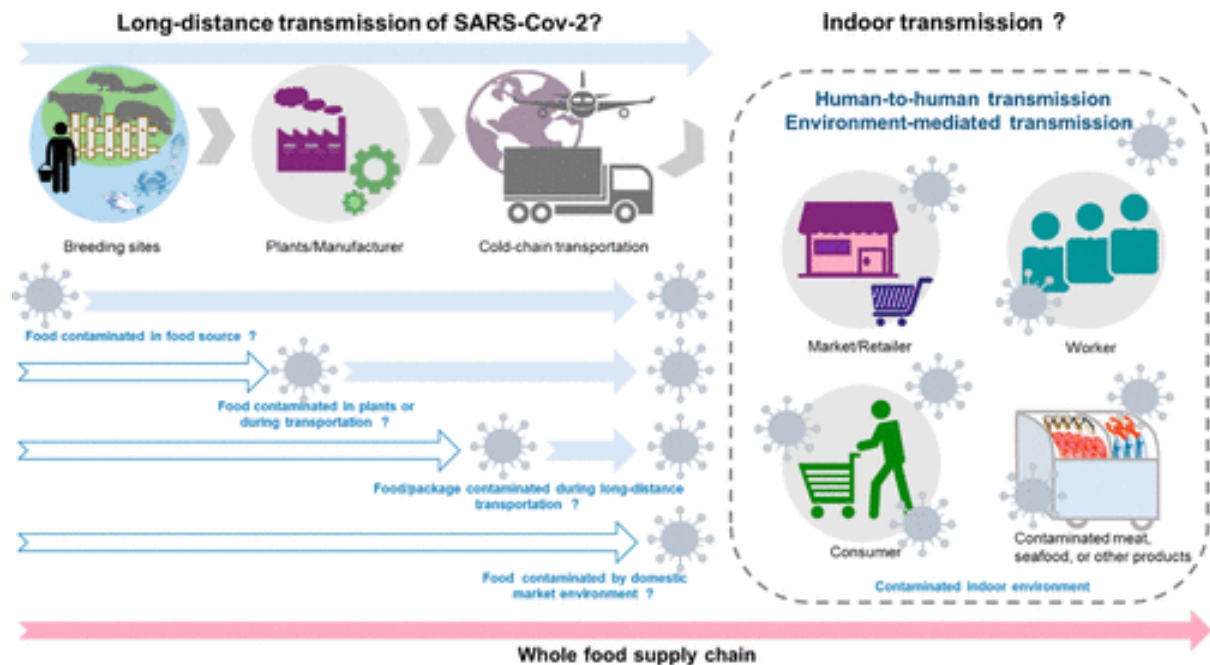
"Social distancing and stringent hygiene seem to be effective in reducing the number of transmitted virus particles, and therefore the infectivity, of coronavirus disease 2019 (COVID-19) and could alter the mode of transmission of the disease. However, it is not known if such practices can change the clinical course in infected individuals.

We prospectively studied an outbreak of COVID-19 in Switzerland among a population of 508 predominantly male soldiers with a median age of 21 years. We followed the number of infections in 2 spatially separated cohorts with almost identical baseline characteristics with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) before and after implementation of stringent social distancing.

Of the 354 soldiers infected prior to the implementation of social distancing, 30% fell ill from COVID-19, while no soldier in a group of 154, in which infections appeared after implementation of social distancing, developed COVID-19 despite the detection of viral RNA in the nasal and virus-specific antibodies within this group.

Social distancing not only can slow the spread of SARS-CoV-2 in a cohort of young, healthy adults but it can also prevent the outbreak of COVID-19 while still inducing an immune response and colonizing nasal passages. Viral inoculum during infection or mode of transmission may be a key factor determining the clinical course of COVID-19."

Environ Sci Technol: [Evidence of Foodborne Transmission of the Coronavirus \(COVID-19\) through the Animal Products Food Supply Chain](#)



PLoS One: [Prospective observational study and serosurvey of SARS-CoV-2 infection in asymptomatic healthcare workers at a Canadian tertiary care center](#)

"Health care workers (HCWs) are at higher risk for SARS-CoV-2 infection and may play a role in transmitting the infection to vulnerable patients and members of the community. This is particularly worrisome in the context of asymptomatic infection. We performed a cross-sectional study looking at asymptomatic SARS-CoV-2 infection in HCWs. We screened asymptomatic HCWs for SARS-CoV-2 via PCR. Complementary viral genome sequencing was performed on positive swab specimens. A seroprevalence analysis was also performed using multiple assays. Asymptomatic health care worker cohorts had a combined swab positivity rate of 29/5776 (0.50%, 95%CI 0.32–0.75) relative to a comparative cohort of symptomatic HCWs, where 54/1597 (3.4%) tested positive for SARS-CoV-2 (ratio of symptomatic to asymptomatic 6.8:1). SARS-CoV-2 seroprevalence among 996 asymptomatic HCWs with no prior known exposure to SARS-CoV-2 was 1.4–3.4%, depending on assay. A novel in-house Coronavirus protein microarray showed differing SARS-CoV-2 protein reactivities and helped define likely true positives vs. suspected false positives. Our study demonstrates the utility of routine screening of asymptomatic HCWs, which may help to identify a significant proportion of infections."

15 February 2021

Alcohol Clin Exp Res: [Trends in US Alcohol Consumption Frequency During the First Wave of the SARS-CoV-2 Pandemic](#)

"The SARS-CoV-2 pandemic created disruptions and stressors which may have influenced alcohol consumption frequency trends. Varying COVID-19 health burden and alcohol policies may have contributed to different consumption trends between states. The aim of this study is to assess trends in alcohol consumption and moderation by state of residence.

We examined trends in adult drinking days, during the first wave of the pandemic (March 10 to June 8) using longitudinal data from Understanding America Study (N=6,172 unique participants; N=28,059 observations). Because state mandates were responsive to disease burden, we modelled interaction by COVID-19 burden, defined as if the state had the median (or higher) daily incidence of COVID-19 cases on the survey date, and state random effects. We controlled for individual sociodemographics, perceived personal/familial COVID-19 burden, mental health symptomology, and risk avoidance.

Drinking days increased throughout the duration (incidence risk ratio [IRR] for drinking per increase in one calendar day = 1.003, 95% CI 1.001, 1.004); trends were heterogeneous by disease burden, with individuals living in states with lower COVID-19 burden increasing (IRR=1.005, 95% CI 1.003, 1.007) faster relative to those living in states with higher COVID-19 burden (IRR = 1.000, 95% CI 0.998, 1.002). Trends were heterogeneous between states, but there was no evidence of systematic geographic clustering of state trends.

Drinking days increased during the first months of the COVID-19 pandemic, particularly among residents of states with lower disease burden."

Brain Inj: [Clinical course of SARS-CoV-2 infection in patients with severe acquired brain injury and a disorder of consciousness: an observational study](#)

"SARS-CoV-2 infection can cause the coronavirus disease (COVID), ranging from flu-like symptoms to interstitial pneumonia. Mortality is high in COVID pneumonia and it is the highest among the frailest. COVID could be particularly serious in patients with severe acquired brain injury (SABI), such as those with a disorder of consciousness. We here describe a cohort of patients with a disorder of consciousness exposed to SARS-CoV-2 early after their SABI.

The full cohort of 11 patients with SABI hospitalized in March 2020 in the IRCCS Fondazione Don Gnocchi rehabilitation (Milan, Italy) was recruited. Participants received SARS-CoV-2 testing and different clinical and laboratory data were collected.

Six patients contracted SARS-CoV-2 and four of them developed the COVID. Of these, one patient had ground-glass opacities on the chest CT scan, while the remaining three



developed consolidations. No patient died and the overall respiratory involvement was mild, requiring in the worst cases low-flow oxygen.

Here we report the clinical course of a cohort of patients with SABI exposed to SARS-CoV-2. The infection spread among patients and caused COVID in some of them. Unexpectedly, COVID was moderate, caused at most mild respiratory distress and did not result in fatalities."

Clin Infect Dis: [Nosocomial Transmission of Coronavirus Disease 2019: A Retrospective Study of 66 Hospital-acquired Cases in a London Teaching Hospital](#)

"Coronavirus disease 2019 (COVID-19) can cause deadly healthcare-associated outbreaks. In a major London teaching hospital, 66 of 435 (15%) COVID-19 inpatient cases between 2 March and 12 April 2020 were definitely or probably hospital-acquired, through varied transmission routes. The case fatality was 36%. Nosocomial infection rates fell following comprehensive infection prevention and control measures."

Clin Microbiol Infect: [Onset, duration and unresolved symptoms, including smell and taste changes, in mild COVID-19 infections. A cohort study in Israeli patients](#)

"This study aims to characterize longitudinal symptoms of mild COVID-19 patients for a period of six months, and potentially aid in disease management.

Phone interviews were conducted with 103 mild COVID-19 patients in Israel, over a six-month period (April 2020 to October 2020). Patients were recruited via social media and word to mouth and were interviewed up to 4 times, depending on their unresolved symptoms reports. Inclusion criteria required participants to be Israeli residents aged  $\geq 18$  years, with positive COVID-19 RT-PCR results and non-severe symptoms. Symptoms' onset, duration, severity, and resolution were analyzed.

44% (45/103), 41% (42/103), 39% (40/103) or 38% (39/103) of the patients experienced headache, fever, muscle ache, or dry cough as the first symptom respectively. Smell and taste changes were experienced  $3.9 \pm 5.4$  and  $4.6 \pm 5.7$  days (mean  $\pm$  SD) after disease onset, respectively. Among prevalent symptoms, fever had the shortest duration ( $5.8 \pm 8.6$  days), and taste and smell changes were the longest-lasting symptoms ( $17.2 \pm 17.6$  and  $18.9 \pm 19.7$  days, durations censored at 60 days). Longer recovery of the sense of smell correlated with the extent of smell change. At the six-month follow-up, 46% (47/103) of the patients had at least one unresolved symptom, most commonly fatigue (22%, 23/103), smell and taste changes (15%, 15/103 and 8%, 8/103 respectively), and breathing difficulties (8%, 8/103).

Long-lasting effects of mild COVID-19 manifested in almost half of the participants reporting at least one unresolved symptom after six months."

J Med Educ Curric Dev: [Prevalence of Anxiety and Depression Among Medical Students During the Covid-19 Pandemic: A Cross-Sectional Study](#)

"The Covid-19 pandemic is a public health emergency with both physical and mental health risks. Medical students have baseline elevated rates of anxiety, depression and burnout. As such, they may be especially susceptible to the psychological stresses of Covid-19. The current study aimed to evaluate the prevalence of anxiety and depression among United States medical students during the Covid-19 pandemic.

A cross-sectional, survey-based study collected demographic data as well as the 7-item Generalized Anxiety Disorder (GAD-7) and the 9-item Patient Health Questionnaire (PHQ-9) to assess anxiety and depression symptoms, respectively. The survey was administered from April 13, 2020 to April 28, 2020 amidst the height of the Covid-19 pandemic.

A total of 1,428 students from 40 US medical schools completed the survey. From those surveyed, 30.6% and 24.3% of respondents screened positive for anxiety and depression, respectively. Median GAD-7 scores were higher among females (7.0 vs 5.0,  $P < .00001$ ), pre-clinical students (7.0 vs 6.0,  $P < .00004$ ), and those with a friend or relative diagnosed with Covid-19 (7.0 vs 6.0,  $P = .001$ ). Median PHQ-9 scores were higher among females (6.0 vs 4.0,  $P < .00001$ ) and pre-clinical students (6.0 vs 4.0,  $P < .00001$ ).

When compared to previous medical student studies, these results are 61% higher for anxiety and 70% higher for depression during the Covid-19 era. The current study suggests that there should be a heightened awareness of and sensitivity to student's mental health during the Covid-19 pandemic with certain cohorts at greater potential risk."

J Thromb Haemost: [Prolonged elevation of D-dimer Levels in Convalescent COVID-19 patients is Independent of the Acute Phase Response](#)

"Persistent fatigue, breathlessness and reduced exercise tolerance have been reported following acute COVID-19 infection. Although immuno-thrombosis has been implicated in acute COVID-19 pathogenesis, the biological mechanisms underpinning Long COVID remain unknown. We hypothesized that pulmonary microvascular immuno-thrombosis may be important in this context.

150 COVID-19 patients were reviewed at St James's Hospital Dublin between May and September 2020 at a median of 80.5 (range 44 – 155) days after initial diagnosis. These included patients hospitalized during initial illness (n=69) and others managed entirely as outpatients (n=81). Clinical examination, chest x-ray and 6-minute walk tests were performed. In addition, a range of coagulation and inflammatory markers were assessed.

Increased D-dimer levels ( $>500\text{ng/ml}$ ) were observed in 25.3% patients up to four months post-SARS-CoV-2 infection. On univariate analysis, elevated convalescent D-dimers were more common in COVID-19 patients who had required hospital admission and in patients



aged more than 50 years ( $p < 0.001$ ). Interestingly, we observed that 29% ( $n = 11$ ) of patients with elevated convalescent D-dimers had been managed exclusively as out-patients during their illness. In contrast, other coagulation (PT, APTT, fibrinogen, platelet count) and inflammation (CRP, IL-6 and sCD25) markers had returned to normal in > 90% of convalescent patients.

Elucidating the biological mechanisms responsible for sustained D-dimer increases may be of relevance in Long COVID pathogenesis and has implications for clinical management of these patients."

*ICYMI (older than the last 2 weeks)*

Am J Transplant: [Donor To Recipient Transmission Of SARS-CoV-2 By Lung Transplantation Despite Negative Donor Upper Respiratory Tract Testing](#) (published 10 February 2021)

"We describe a case of proven transmission of SARS-CoV-2 from lung donor to recipient. The donor had no clinical history or findings suggestive of infection with SARS-CoV-2 and tested negative by reverse transcriptase polymerase chain reaction (RT-PCR) on a nasopharyngeal (NP) swab obtained within 48 hours of procurement. Lower respiratory tract testing was not performed. The recipient developed fever, hypotension and pulmonary infiltrates on post-transplant day 3, and RT-PCR testing for SARS-CoV-2 on an NP swab specimen was non-reactive, but positive on bronchoalveolar lavage (BAL) fluid. One thoracic surgeon present during the transplantation procedure developed COVID-19. Sequence analysis of isolates from donor BAL fluid (obtained at procurement), the recipient, and the infected thoracic surgeon proved donor origin of recipient and health care worker infection. No other organs were procured from this donor. Transplant centers and organ procurement organizations should perform SARS-CoV-2 testing of lower respiratory tract specimens from potential lung donors, and consider enhanced personal protective equipment for health care workers involved in lung procurement and transplantation."

PLoS One: [Modified full-face snorkel masks as reusable personal protective equipment for hospital personnel](#) (published 13 January 2021)

"Here we adapt and evaluate a full-face snorkel mask for use as personal protective equipment (PPE) for health care workers, who lack appropriate alternatives during the COVID-19 crisis in the spring of 2020. The design (referred to as Pneumask) consists of a custom snorkel-specific adapter that couples the snorkel-port of the mask to a rated filter (either a medical-grade ventilator inline filter or an industrial filter). This design has been tested for the sealing capability of the mask, filter performance, CO<sub>2</sub> buildup and clinical usability. These tests found the Pneumask capable of forming a seal that exceeds the standards required for half-face respirators or N95 respirators. Filter testing indicates a

range of options with varying performance depending on the quality of filter selected, but with typical filter performance exceeding or comparable to the N95 standard. CO<sub>2</sub> buildup was found to be roughly equivalent to levels found in half-face elastomeric respirators in literature. Clinical usability tests indicate sufficient visibility and, while speaking is somewhat muffled, this can be addressed via amplification (Bluetooth voice relay to cell phone speakers through an app) in noisy environments. We present guidance on the assembly, usage (donning and doffing) and decontamination protocols. The benefit of the Pneumask as PPE is that it is reusable for longer periods than typical disposable N95 respirators, as the snorkel mask can withstand rigorous decontamination protocols (that are standard to regular elastomeric respirators). With the dire worldwide shortage of PPE for medical personnel, our conclusions on the performance and efficacy of Pneumask as an N95-alternative technology are cautiously optimistic."

Travel Med Infect Dis: [Opportunities for re-evaluation amid COVID-19](#) (published online 12 January 2021)

"Aircraft fitness-to-fly is among the elements that make aviation the safest form of long-distance transport. The health of cabin crew is a crucial determinant in carrying out safety-related duties. 'Fitness-to-fly' is associated with defined workplace conditions, for which airlines have a legal duty to ensure fitness for employment. We explored the literature on fitness-to-fly to obtain a pragmatic assessment of the challenges for aeromedical examinations. Regulations promulgated by aviation regulatory authorities and airline-internal policies have similar status and meaning, yet there is no harmonised approach internationally, and an inability to conform periodic medical assessments to actual operational fitness. The COVID-19 pandemic has highlighted the need to better understand fitness-to-fly criteria. Fitness-to-fly measures are mainly based on self-reported data and there is a need for a 'safety' factor for self-reports. Aeromedical evaluations should evolve from meeting medical standards to include pandemics as an element of the overall risk of aircraft operations. Re-evaluating criteria for fitness-to-fly assessment will further the goal of linking research to the actual needs of public health decisionmakers. If airlines are to resume operations at pre-pandemic levels, they must demonstrate to the public and public health agencies that fitness-to-fly assessment is appropriate and effective."

### **Selected Literature: Preprints**

*Preprints are found on preprint servers such as [arXiv](#), [bioRxiv](#), and [medRxiv](#); they are commonly used for biomedical research. Preprints may later be published in peer-reviewed journals. Per medRxiv: "Preprints are preliminary reports of work that have not been certified by peer review. They should not be relied on to guide clinical practice or health-related behavior and should not be reported in news media as established information."*

medRxiv: [Prior COVID-19 Infection and Antibody Response to Single Versus Double Dose mRNA SARS-CoV-2 Vaccination](#) (posted 24 February 2021)

"The double dose regimen for mRNA vaccines against SARS-CoV-2 presents both a hope and a challenge for global efforts to curb the COVID-19 pandemic. With supply chain logistics impacting the rollout of population-scale vaccination programs, increasing attention has turned to the potential efficacy of single versus double dose vaccine administration for select individuals. To this end, we examined response to Pfizer-BioNTech mRNA vaccine in a large cohort of healthcare workers including those with versus without prior COVID-19 infection. For all participants, we quantified circulating levels of SARS-CoV-2 anti-spike (S) protein IgG at baseline prior to vaccine, after vaccine dose 1, and after vaccine dose 2. We observed that the anti-S IgG antibody response following a single vaccine dose in persons who had recovered from confirmed prior COVID-19 infection was similar to the antibody response following two doses of vaccine in persons without prior infection ( $P>0.57$ ). Patterns were similar for the post-vaccine symptoms experienced by infection recovered persons following their first dose compared to the symptoms experienced by infection naive persons following their second dose ( $P=0.66$ ). These results support the premise that a single dose of mRNA vaccine could provoke in COVID-19 recovered individuals a level of immunity that is comparable to that seen in infection naive persons following a double dose regimen. Additional studies are needed to validate our findings, which could allow for public health programs to expand the reach of population wide vaccination efforts."

medRxiv: [COVID-19 Vaccine Hesitancy in Underserved Communities of North Carolina](#) (posted 23 February 2021)

"Background: In the United States, underserved communities including Blacks and Latinx are disproportionately affected by COVID19, and widespread vaccination is critical for curbing this pandemic. This study sought to estimate the prevalence of COVID19 vaccine hesitancy, describe attitudes related to vaccination, and identify correlates among racial minority and marginalized populations across 9 counties in North Carolina.

Methods: We conducted a cross-sectional survey with a self administered questionnaire distributed at free COVID19 testing events in underserved rural and urban communities from August 27 to December 15, 2020. Vaccine hesitancy was defined as the response of NO or DO NOT KNOW/NOT SURE to whether the participant would get the COVID19 vaccine as soon as it became available.

Results: The sample comprised 948 participants including 27.7% Whites, 59.6% Blacks, 12.7% Latinx, and 63% female. Thirty-two percent earned  $<\$20K$  annually, 60% owned a computer and ~80% had internet access at home. The prevalence of vaccine hesitancy was 68.9% including 62.7%, 74%, and 59.5% among Whites, Blacks, and Latinx, respectively. Between September and December, the largest decline in vaccine hesitancy occurred

among Whites (27.5 percentage points), followed by Latinx (17.6) and the smallest decline was among Black respondents (12.0). 51.2% of the respondents reported vaccine safety concerns, 23.7% wanted others to get of the respondents reported they would trust health care providers with information about the COVID19 vaccine. Factors associated with hesitancy in multivariable logistic regression included being female (OR=1.90 95%CI[1.36, 2.64]), being Black (OR=1.68 [1.106 2.45]), calendar month (OR=0.76 [0.63, 0.92]), safety concerns (OR=4.28 [3.06, 5.97]), and government distrust (OR=3.57 [2.26, 5.63]).

Conclusions: This study reached underserved minority populations in a number of different locations to investigate COVID19 vaccine hesitancy. We built on existing relationships and further engaged the community, stake holders and health department to provide free COVID19 testing. This direct approach permitted assessment of vaccine hesitancy (which was much higher than national estimates), distrust, and safety concerns."

medRxiv: [Estimating the spreading and dominance of SARS-CoV-2 VOC 202012/01 \(lineage B.1.1.7\) across Europe](#) (posted 23 February 2021)

"We develop a two strain, age-structured, compartmental model to assess the spreading potential of the B.1.1.7 variant across several European metropolitan areas and countries. The model accounts for B.1.1.7 introductions from the UK and different locations, as well as local mitigation policies in the time period 2020/09-2021/02. In the case of an increase of transmissibility of 50%, the B.1.1.7 variant has the potential to become dominant in all investigated areas by the end of March 2021."

SSRN: [Effectiveness of BNT162b2 mRNA Vaccine Against Infection and COVID-19 Vaccine Coverage in Healthcare Workers in England, Multicentre Prospective Cohort Study \(the SIREN Study\)](#) (posted 22 February 2021)

"Background: BNT162b2 mRNA and ChAdOx1 nCoV-19 adenoviral vector vaccines have been rapidly rolled out in the UK. We determined the factors associated with vaccine coverage for both vaccines and documented the vaccine effectiveness of the BNT162b2 mRNA vaccine in our healthcare worker (HCW) cohort study of staff undergoing regular asymptomatic testing.

Methods: The SIREN study is a prospective cohort study among staff working in publicly funded hospitals. Baseline risk factors, vaccination status (from 8/12/2020-5/2/2021), and symptoms are recorded at 2 weekly intervals and all SARS-CoV-2 polymerase chain reaction (PCR) and antibody test results documented. A mixed effect proportional hazards frailty model using a Poisson distribution was used to calculate hazard ratios to compare time to infection in unvaccinated and vaccinated participants to estimate the impact of the BNT162b2 vaccine on all (asymptomatic and symptomatic) infection.

Findings: Vaccine coverage was 89% on 5/2/2021. Significantly lower coverage was associated with prior infection (aOR 0.59 95% confidence interval [CI] 0.54-0.64), female (aOR 0.72, 95% CI 0.63-0.82), aged under 35 years, being from minority ethnic groups (especially Black, aOR 0.26, 95% CI 0.21-0.32), porters/security guards (aOR 0.61, 95% CI 0.42-0.90), or midwife (aOR 0.74, 95% CI 0.57-0.97), and living in more deprived neighbourhoods (IMD 1 (most) vs. 5 (least) (aOR 0.75, 95% CI 0.65-0.87). A single dose of BNT162b2 vaccine demonstrated vaccine effectiveness of 72% (95% CI 58-86) 21 days after first dose and 86% (95% CI 76-97) seven days after two doses in the antibody negative cohort.

Conclusion: Our study demonstrates that the BNT162b2 vaccine effectively prevents both symptomatic and asymptomatic infection in working age adults; this cohort was vaccinated when the dominant variant in circulation was B.1.1.7 and demonstrates effectiveness against this variant."

medRxiv: [Exhaled SARS-CoV-2 quantified by face-mask sampling in hospitalised patients with covid-19](#) (posted 21 February 2021)

"Human to human transmission of SARS-CoV-2 is driven by the respiratory route but little is known about the pattern and quantity of virus output from exhaled breath. We have previously shown that face-mask sampling (FMS) can detect exhaled tubercle bacilli and have adapted its use to quantify exhaled SARS-CoV-2 RNA in patients admitted to hospital with covid-19.

Between May and December 2020, we took two concomitant FMS and nasopharyngeal samples (NPS) over two days, starting within 24 hours of a routine virus positive NPS in patients hospitalised with covid-19, at University Hospitals of Leicester NHS Trust, UK. Participants were asked to wear a modified duckbilled facemask for 30 minutes, followed by a nasopharyngeal swab. Demographic, clinical, and radiological data, as well as International Severe Acute Respiratory and emerging Infections Consortium (ISARIC) mortality and deterioration scores were obtained.

Exposed masks were processed by removal, dissolution and analysis of sampling matrix strips fixed within the mask by RT-qPCR. Viral genome copy numbers were determined and results classified as Negative; Low:  $\leq 999$  copies; Medium: 1,000-99,999 copies and High  $\geq 100,000$  copies per strip for FMS or per 100 $\mu$ l for NPS.

102 FMS and NPS were collected from 66 routinely positive patients; median age: 61 (IQR 49 - 77), of which FMS was positive in 37% of individuals and concomitant NPS was positive in 50%. Positive FMS viral loads varied over five orders of magnitude ( $<10$ - $3.3 \times 10^6$  genome copies/strip); 21 (32%) patients were asymptomatic at the time of sampling. High FMS viral load was associated with respiratory symptoms at time of sampling and shorter interval between sampling and symptom onset (FMS High: median (IQR) 2 days (2-3) vs FMS

Negative: 7 days (7-10),  $p=0.002$ ). On multivariable linear regression analysis, higher FMS viral loads were associated with higher ISARIC mortality (Medium FMS vs Negative FMS gave an adjusted coefficient of 15.7, 95% CI 3.7-27.7,  $p=0.01$ ) and deterioration scores (High FMS vs Negative FMS gave an adjusted coefficient of 37.6, 95% CI 14.0 to 61.3,  $p=0.002$ ), while NPS viral loads showed no significant association.

We demonstrate a simple and effective method for detecting and quantifying exhaled SARS-CoV-2 in hospitalised patients with covid-19. Higher FMS viral loads were more likely to be associated with developing severe disease compared to NPS viral loads. Similar to NPS, FMS viral load was highest in early disease and in those with active respiratory symptoms, highlighting the potential role of FMS in understanding infectivity."

DASH: [Densely sampled viral trajectories suggest longer duration of acute infection with B.1.1.7 variant relative to non-B.1.1.7 SARS-CoV-2](#) (posted 16 February 2021)

"To test whether acute infection with B.1.1.7 is associated with higher or more sustained nasopharyngeal viral concentrations, we assessed longitudinal PCR tests performed in a cohort of 65 individuals infected with SARS-CoV-2 undergoing daily surveillance testing, including seven infected with B.1.1.7. For individuals infected with B.1.1.7, the mean duration of the proliferation phase was 5.3 days (90% credible interval [2.7, 7.8]), the mean duration of the clearance phase was 8.0 days [6.1, 9.9], and the mean overall duration of infection (proliferation plus clearance) was 13.3 days [10.1, 16.5]. These compare to a mean proliferation phase of 2.0 days [0.7, 3.3], a mean clearance phase of 6.2 days [5.1, 7.1], and a mean duration of infection of 8.2 days [6.5, 9.7] for non-B.1.1.7 virus. The peak viral concentration for B.1.1.7 was 19.0 Ct [15.8, 22.0] compared to 20.2 Ct [19.0, 21.4] for non-B.1.1.7. This converts to 8.5 log<sub>10</sub> RNA copies/ml [7.6, 9.4] for B.1.1.7 and 8.2 log<sub>10</sub> RNA copies/ml [7.8, 8.5] for non-B.1.1.7. These data offer evidence that SARS-CoV-2 variant B.1.1.7 may cause longer infections with similar peak viral concentration compared to non-B.1.1.7 SARS-CoV-2. This extended duration may contribute to B.1.1.7 SARS CoV-2's increased transmissibility."

## News in Brief

Unspeakable loss: "More than 500,000 people have died from COVID-19 in the US" ([NPR](#)).

### *The New Variants*

A new variant, B.1.526, has been detected in New York; the mutation may 'help the virus dodge the immune system' ([NYT](#)).

Data suggest that the California variant is more transmissible and now makes up more than half of infections in over 40 countries ([WashPo](#)).

There are several preprints out this week about the different variants, including the New York and California variants; see: [bioRxiv preprint posted 22 Feb](#), [bioRxiv preprint posted 23 Feb](#), and [medRxiv preprint posted 25 Feb](#).

Moderna has submitted a variant-specific vaccine (B.1.351, the 'South Africa' one) to the NIH for study ([Moderna](#)).

More might be better: Pfizer is looking at giving a third 'booster' shot of its vaccine to deal with emerging variants ([STAT](#)).

### *Getting Data*

Google is funding a massive, international open repository that will collect anonymized data of individuals including date of COVID symptoms and travel history ([Nature](#)).

The NIH will study 'long COVID' – which apparently now comes with a name change: Post-Acute Sequelae of SARS-CoV-2 infection (PASC) ([NIH](#); see also: [Clin Rev Allergy Immunol](#) noted above).

### *Vaccines*

On Friday, the FDA's Vaccines and Related Biological Products Advisory Committee meets to discuss the Johnson & Johnson / Janssen coronavirus vaccine ([FDA](#); see also: [briefing document \[pdf\]](#)).

"France considers only one vaccine dose for people who had covid" ([WashPo](#)).

Russia has offered the African Union (55 member states) 300 million doses of the Sputnik V vaccine ([Reuters](#)).

Most vaccine trials don't report data on ethnicity or race, and that's a problem ([STAT](#)).

"Why COVID vaccines are so difficult to compare: Despite the widespread roll-out of several vaccines, it could be months before they can be ranked" ([Nature](#)).

### *Vaccines – Who's Getting Them?*

Ghana is the first country to get vaccine under the WHO's COVAX program for low-income countries ([CNBC](#)).

Letting placebo recipients in coronavirus vaccine trials get the vaccine later could skew long-term studies ([NPR](#)).

The US isn't doing as bad as you might think when it comes to administering COVID vaccines; 5th in the world with about 19 per 100 people getting a dose ([NYT](#)).



### *Thanks, Coronavirus*

All that pandemic screen time could be causing an uptick in vision problems in children ([STAT](#); see also: [JAMA Ophthalmology article](#)).

"When does COVID-19 become a disability? 'Long-haulers' push for answers, and benefits" ([NPR](#)).

"Coronavirus reinfection will soon become our reality" ([Atlantic](#)).

We may see an increase in the common cold as schools reopen ([STAT](#); see also: [Emerg Infect Dis article](#)).

### *Are We There Yet?*

"A simple rule of thumb for knowing when the pandemic is over: At some point—maybe even soon—the emergency phase of the pandemic will end. But what, exactly, is that magic threshold?" ([Atlantic](#)).

"You got the vaccine! What can you do now? A guide to America's awkward, semi-vaccinated months" ([Atlantic](#)).

"Can COVID vaccines stop transmission? Scientists race to find answers: Controlling the pandemic will require shots that prevent viral spread, but that feature is difficult to measure" ([Nature](#)).

### *Long Reads*

"We're Just rediscovering a 19th-Century pandemic strategy: The first way to fight a new virus would once have been opening the windows" ([Atlantic](#)).

"False claims tying coronavirus vaccines to infertility drive doubts among women of childbearing age: Health officials worry their hesitation may affect efforts to reach immunization targets" ([WashPo](#)).

"After billions of dollars and dozens of wartime declarations, why are vaccines still in short supply" ([KHN](#)).

### *Other Outbreaks and Infectious Diseases*

"West African countries ramp up Ebola preparedness" ([WHO](#)).

A *Listeria* outbreak has been lined to queso fresco ([CDC](#)).

Russia has reported the first case of H5N8 avian flu from birds to humans ([CIDRAP](#); see also: [ECDC's Threat Assessment Brief: First identification of human cases of avian influenza A\(H5N8\) infection](#)).



*And Now for Something Completely Different: Food Edition*

Buttergate: "Something is amiss with Canadian butter, according to local foodies, who have been arguing for weeks that their blocks are harder to spread than usual" ([BBC](#)).

Meat-free school meals are sparking a backlash in France ([AP](#)).

Speaking of: "What school lunch looks like in 19 countries around the world" ([Business Insider](#)).

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